

Just the Facts About ...

Energy Efficient Landscaping

Energy Wise Homes - Summer Edition

Most landscaping practices seem to focus on making a home more attractive, or even enhancing property values. However, strategically locating various landscaping elements, such as trees, shrubs, vines, and groundcovers, can also make a home more comfortable, and energy efficient. Very often, the cost of planting several trees and shrubs is soon offset by significant savings in energy costs.

Getting Started

Typically, the first step in an energy-efficient landscape is to plant a tree or trees on the south or southwest side of your home, where they can block the majority of sunlight, especially that striking your home in the mid- to late-afternoon. A couple of large trees, such as maples, oaks, and ash, will obviously produce the most shade, although smaller trees, such as dogwoods and serviceberry, can effectively screen the sides of a house.

Larger trees should be planted no closer than 20 feet from the house; smaller trees no closer than 15 feet. Among the fastest growing large shade trees are tulip poplars and sycamores, although both have somewhat weak branches and should never be planted where limbs can actually overhang the roof.

Deciduous trees, those which lose their leaves in winter, are more often planted than evergreens, as it generally desirable to allow the sun to provide passive solar heating in winter, at least



for walls and windows. However, native evergreens, such as American holly, eastern red cedar, and eastern white pine, can also be used, depending on your overall landscaping theme.

Walls & Windows

Use vines to shade wall areas and windows. Vines can either be trained to cover wall spaces, or can be attached to arbors and trellises. For example, Virginia creeper can climb up the side of a masonry-covered wall without support, providing lush, attractive shade equaled only by its crimson-purple autumn foliage. Climbing hydrangea (*Hydrangea anomala* ssp. *petiolaris*) is also able to climb without support, or damage to building surfaces, and is a hardy and brilliant white-flowering specimen introduced from Asia.

Trellis structures can support a wide variety of vines and climbers, from showy roses to native favorites such as coral honeysuckle, crossvine, virgin's bower, and American bittersweet. You can even take an edible landscaping approach and train pole beans or hyacinth beans to climb up string or wire supports.

It should be noted that shading fully exposed windows is more important than shading walls, most of which are fully insulated.

For this reason, arbor structures built along the south side of a house can provide shade like a living awning, but with a great deal more beauty. You can train a host of interesting vines along the arbor, from edible kiwis to ornamental hops and wisteria.

Patios & Walkways

After addressing some of the direct sources of sunlight, think about the energy reflected from patios and walkways. Even the air temperature over grass is about ten degrees cooler than that over asphalt or other artificial surfaces. Simply shading these “hard-scaped” areas can help appreciably, or you might want to reduce or replace concrete paths with natural, living materials, such as thyme lawns or mulched paths with herbal borders. Moreover, you can improve on the air conditioning benefit of lawns by replacing turf with clumps of native and ornamental grasses, perennial beds, and colorful ground-covers.

Other Helpful Tips

Keep in mind that landscaping to reduce energy costs can extend beyond merely shading rooftop and windows. According to Ann Elsen, the county’s energy planner, “If it looks cool, it is cool.” Elsen is referring to the impression we have of a typical forest scene: green, serene, and lush with tall trees, ferns, and the leafy masses of smaller trees and shrubs. It always seems quite a bit cooler in such inviting environments because wooded areas really are cooler.

Trees and vegetation actually provide some chilling benefits through evaporative cooling, the transpiration of water through plant leaves. Research by the Lawrence Berkeley National Laboratory found that midday air temperatures were up to six degrees cooler in tree-shaded areas compared to treeless neighborhoods. If you want to lower summer temperatures all around your home, try creating your own personal

forest by grouping trees together in small groves and expanding green areas with ground covers and shrubs.

The more tree cover you establish, especially if it can help shade hot streets, sidewalks, and driveways, the cooler your immediate landscape will be. Naturally, if you work through a community association to get trees planted along streets and common areas, you can beautify your neighborhood, enhance overall property values, while keeping all of your homes more comfortable and energy efficient.

Planting Suggestions

Large Trees Mature Height

| | |
|---------------------|---------|
| American Holly | 40-60' |
| Sycamore | 40-60' |
| Eastern Red Cedar | 30-40' |
| Maple (Red, Silver) | 40-60' |
| Tulip Poplar | 70-120' |
| Oak (Red, Yellow) | 40-90' |

Small Trees Mature Height

| | |
|-------------------|--------|
| Flowering Dogwood | 15-30' |
| Eastern Redbud | 25' |
| Inkberry Holly | 6-8' |
| Spicebush | 6-15' |
| Witch Hazel | 3-15' |
| Mahonia | 6' |

Vines Mature Height

| | |
|----------------------|--------|
| Crossvine | 30-45' |
| Trumpet Vine | 30'+ |
| Leather Flower | 6' |
| Virgin's Bower | 6-12' |
| American Bittersweet | to 45' |
| Virginia Creeper | to 45' |

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